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ous development as a consequence of its shallow conceptions of the purposes and possibilities of intellectual training. A public opinion must be created which will be intelligent enough to detect and reprehend methods that are insufficient or unworthy, and men that are ineffective or unfit, as well as to accord adequate recognition to men of high purpose and real ability. When such an opinion exists there need be no fear of a lack of men both willing to strive for and capable of earning the high distinction its approval will confer.

SIDNEY GUNN

MASSACHUSETTS INSTITUTE  
OF TECHNOLOGY

HOWARD TAYLOR RICKETTS<sup>1</sup>

DR. RICKETTS came to the university in 1902 to join the newly founded department of pathology and bacteriology. He had just returned from a year's visit to European laboratories. Previously he was fellow in cutaneous pathology in Rush Medical College for two years, taking up that work at the end of his service as interne in the Cook County Hospital. His medical course he took at the Northwestern University Medical School, where he graduated in 1897.

He was a modest and unassuming man, of great determination and of the highest character, loyal and generous, earnest and genuine in all his doings—a personality of unusual and winning charm. His associates of the hospital and fellowship days who knew him well, knew his ability and energy, his distinct fondness for the day's work, all looked to him for the more than ordinary achievement.

He deliberately turned away from the allurements of active medical practise and decided to devote himself to teaching and investigation in pathology. He had early become possessed of noble ideals and had a pure love

for the search after truth in his chosen field, which abided with him and gave him a high conception of all his duties and relations and placed a special stamp on his work. His instinct for research at no time was permitted to lie dormant and unused, but growing stronger it carried him on farther and farther, and in due time the university freely and in special ways promoted the work in which he was to accomplish such large results. The torch was placed within the grasp of hands fit to carry it forward, and during the few short years given him he advanced it farther than we may realize at this moment, because he broke open paths for future progress.

His earlier researches are all marked by rare insight, directness and accuracy, by clear and forceful reasoning; it is in his brilliant work on Rocky Mountain fever, however, that Dr. Ricketts fully reveals himself as investigator of the first rank. He took up the study of this fever in the spring of 1906 as a sort of pastime during an enforced holiday on account of overwork. The disease is a remarkable one; it occurs in well-defined areas in the mountains, is sharply limited to the spring months, varies greatly in severity, the mortality in one place being about 5, in another between 80 and 90 per cent. For some time it had been regarded as caused in some way by the bite of a tick. Dr. Ricketts promptly found that the disease is communicable to lower animals and that a certain tick, which occurs naturally on a large number of animals in those regions, by its bite can transmit the disease from the sick to the healthy animal.

These observations opened a new field, and henceforth he devoted himself untiringly to the investigation of the many problems that arose one after another as the work went on, both in the laboratory here and in the field. As we follow the various stages in the progress of this intensely active work it becomes very clear that Dr. Ricketts not only was gifted with imaginative power so that he could see and trace the various lines along which the solution of a problem might be sought, but that he also possessed in a full measure the capacity for that hard, accurate, patient work

<sup>1</sup>An address delivered by Professor Ludwig Hektoen at a memorial service in the Leon Mandel Assembly Hall, May 15, 1910. Reprinted from *The University of Chicago Magazine*.

necessary for the more difficult task of finding the one, true solution. This combination of speculative ability and the power to do steady toil and even drudgery often under great difficulties made him a great investigator and brought him success.

Some of the experiments devised to lay bare the secrets of the different orders of living things concerned in spotted fever are masterful in their ingenuity and comprehensiveness, notably those bearing on the hereditary transmission of spotted fever virus in ticks, on the occurrence of infected ticks in nature, and on the part played by small wild animals like the squirrel as source for the virus.

Having solved many hard questions he came to the conclusion that in man spotted fever depends simply on the accidental bite by an adult tick carrying active virus. As only adult ticks find their way to man and as they occur only in the spring, the peculiar seasonal prevalence of the disease is nicely explained. It is almost unnecessary to point out that the work furnishes clear and direct indications as to what to do in order to prevent the disease. Finally, last year, he discovered the immediate cause of spotted fever, namely, a small bacillus, which he found in the blood of patients and in ticks and their eggs. Strains of this bacillus present in ticks from different places vary greatly in morbid power or virulence, and this fact may explain why spotted fever varies so greatly in severity.

Many of the observations and discoveries in connection with this work have a much wider significance, and will surely prove of value and service on the ever-shifting battleground with infectious diseases.

Rocky Mountain spotted fever in many ways resembles typhus fever. As he was completing his three years' study of the Rocky Mountain disease, having determined its mode of transmission, its cause, and a rational method for its prevention, Dr. Ricketts became more and more strongly impressed with the thought which he had had for some time that the special knowledge and training thus acquired would prove of great value in the study of

typhus fever and thereby perhaps be put to the best use. This idea met with encouragement, and in July of last year it was definitely decided to take up the study of typhus fever in the City of Mexico, that being the nearest place, so far as known, where any such work could be done. I speak of this date because I wish to make it clear that Dr. Ricketts reached his decision before and entirely independently of the establishment by the Mexican government of certain prizes for successful investigation of the typhus fever of Mexico (*Tabardillo*).

Typhus fever (also known as ship fever, camp fever, jail fever, hospital fever) has been one of the great epidemic diseases of the world. Its devastations are recorded on the dark pages of history, the pages that tell of war, overcrowding, want and misery. Until the middle of the last century it prevailed in practically all large European cities; now it has largely disappeared, owing, it is believed, to better sanitary conditions; but it is still smoldering in many centers, and in some places, as in Mexico, typhus in one of its forms now claims hundreds of victims each year. When it assumes its most virulent forms typhus fever may become one of the most contagious of diseases, and there is no disease that has claimed so many victims among physicians and nurses. It is stated that in a period of twenty-five years, of 1,230 physicians attached to institutions in Ireland 550 succumbed to typhus. Of the six American scientists who have studied the typhus fever of Mexico since December last three have been stricken and two have died—Conneff, of the Ohio State University expedition, and our Ricketts. It is when the sick are aggregated in hospital wards that the danger of infection is especially great. Until very recently nothing was known as to the cause of typhus fever and the exact mode of its transmission.

Fully acquainted as a matter of course with all the characteristics of the disease, Dr. Ricketts and his volunteer assistant, Mr. Russell Wilder, began their work in December last. Before many weeks had passed results of great importance were secured; it was

found that typhus is different from the Rocky Mountain fever, although they have many points in common; that the Mexican typhus is communicable to the monkey; and that it may be transmitted by an insect (*Pediculus vestimenti*). Some of these results are confirmatory of very recent results obtained by others, but on April 23 they were able to announce the new discovery of a microorganism, a bacillus, in the blood of typhus patients and in the insect. There is good reason to believe that this bacillus is the actual cause of typhus fever.

While courageously and devotedly pushing this and other work on to completion Dr. Ricketts was stricken with typhus, and the unfinished investigations of such fundamental importance must be taken up by others. Thus a young and noble career of great achievement and of large service to humanity came to a sudden and heroic end, and a new name was placed on the martyr roll of science.

Those near to him know that he fully understood the dangers to which he would be exposed and the risks he would run. He decided he would take those risks, meet the dangers with all possible means of prevention, and do the work that would come to his hands. And so he made the great sacrifice and gave all that a man can give for his fellow-men.

#### THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

THE hospital of the Rockefeller Institute for Medical Research was opened on October 17. There were no special ceremonies, but a number of guests were present to inspect the hospital. At the same time it was announced that Mr. Rockefeller had given securities valued at \$3,820,000 for the endowment of the institute, and that its organization had been completed.

The following announcement has been made:

The board of trustees is initially constituted as follows: John D. Rockefeller, Jr., Frederick T. Gates, William H. Welch, Starr J. Murphy and Simon Flexner.

The function of the board of trustees is to hold

and care for the property of the institute, including the investment of the endowment funds, and to hold the entire income at the disposal and under the full control of the board of scientific directors, which is constituted as follows:

Dr. William H. Welch, of Baltimore, president; Dr. T. Mitchell Prudden, of New York; Dr. L. Emmett Holt, of New York, secretary and treasurer; Dr. Christian A. Herter, of New York; Dr. Simon Flexner, of New York, director of laboratories; Dr. Herman M. Biggs, of New York, and Dr. Theobald Smith, of Boston.

The final establishment of the Rockefeller Institute for Medical Research, with its present generous endowment, is the culmination of a series of carefully considered gifts, each one based on a thorough demonstration of existing needs and on evidence of competent stewardship of funds previously intrusted.

The initial gift was made in 1901, when \$200,000 was given, to be used in a limited number of years in the form of grants to support research in different localities. In 1902 a gift of \$1,000,000 was received to cover the erection of a laboratory building and the cost of running expenses for a few years. When the plans for the future organization of the institute were being prepared the necessity for having a hospital under the control of the institute was clearly felt.

Mr. Rockefeller became so clearly convinced of this need that the erection of a hospital was determined upon. For this purpose \$220,000 remaining from the previous gift of \$1,000,000 and an additional gift of \$620,000 were used. Meanwhile, in 1907, while the first plans for the hospital were being prepared, Mr. Rockefeller gave \$2,600,000, the first fund to be used solely for the endowment of the institution. With their first legal meeting, which took place this afternoon at the institute, the board of trustees assumed possession of Mr. Rockefeller's latest gift of \$3,820,000.

The hospital, which will profit largely by the new income, is not to be regarded as a separate institution; it is merely a part of the working equipment for medical research controlled by the one board of directors. Being now intrusted with by far the largest sum of money available for medical research, and with a wonderfully generous and perfect equipment at their command, the directors have a high sense of their responsibility to the public for the careful discharge of their great trust.